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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/502,133      | 02/11/2000  | Harold E. Helson     | 103544.127          | 4787             |

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02/11/2005

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EXAMINER

THOMSON, WILLIAM D

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 02/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/502,133

**Applicant(s)**

HELSON, HAROLD E.

**Examiner**

William Thomson

**Art Unit**

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/17/2003; 10/04/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 6-8 and 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9 and 13-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/9/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. Claims 1-27 of U. S. Patent 09/502,133 are in front of the office for consideration. Claims 1, 5, 9, 13-27 were elected by Applicants on 10/04/2004 and remain pending.

#### **Election/Restrictions**

2. Claims 2-4, 6-8, 10-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/04/2004.

#### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 5, 9, 13-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weininger ("W": '796) in view of User's Guide to CS ChemFinder 4.0 ("C": IDS) and Chem3D ("CH" - 1997 – of record).**

5. Weininger discloses the limitations as cited below but does not disclose representing the instance of symmetry as a list of equivalent atoms and bonds.

6. ChemFinder CS discloses representing the instance of symmetry as a list of equivalent atoms and bonds (pp. 82-83 "substituents"; 89-90 "Similarity Rules").

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7. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the base teaching with the secondary teaching because CS ChemFinder expressly discloses displaying the inherent equivalent atomic structures (pp. 82-83, 89-90).

8. Weininger further does not expressly disclose details of symmetry operations.

9. Chem3D discloses symmetry operations and properties and their manipulation in molecular modeling and analysis (chapters 4-5).

10. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the base teaching with the secondary teaching because Chem3D expressly discloses carrying out and representing various chemical symmetry operations (chapter 4-5) when modeling and analyzing chemical structures.

11. Specifically, the art discloses:

deriving a chemical structure diagram, comprising:

identifying, from a connection table for a chemical structure, an instance of chemical structural symmetry in the chemical structure (W: col. 8, lines 19-60 for the use of connection tables for representing molecular or chemical structure.);

representing the instance of symmetry as a list of groups of equivalent atoms and bonds (CS ChemFinder: pp. 82-83, 89-90);

expressing the instance of chemical structural symmetry in the chemical structure diagram (W: Fig. 9A-N for expressing the molecular structure in a chemical structure diagram and corresponding text in col. 14, lines 21 et Seq.)

wherein the instance of chemical structural symmetry is based on rotational symmetry (CH: chapters 4-5).

wherein the instance of chemical structural symmetry is based on reflective symmetry (CH: chapters 4-5).

wherein the instance of chemical structural symmetry is based on inversive symmetry (CH: chapters 4-5).

basing the identification on stereochemistry (CH: chapters 4-5).

basing the identification on rotational symmetry, reflective symmetry, and stereochemistry (CH: chapters 4-5).

basing the identification on double bond stereochemistry (CH: chapters 4-5).

determining a pivot point for the list (CH: chapters 4-5).

determining a graph-theoretic center for the list (CH: chapters 4-5).

determining a symmetric order for the instance of chemical structural symmetry (CH: chapters 4-5).

determining whether an atom belongs to the determined instance of chemical structural Symmetry (CH: chapters 4-5).

determining whether a bond belongs to the determined instance of chemical structural symmetry (CH: chapters 4-5).

in the event the determined instance of chemical structural symmetry is reflective, selecting a position on an opposite side of a mirror line (CH: chapters 4-5).

in the event the determined instance of chemical structural symmetry is rotative, selecting a position based on a pivot point (CH: chapters 4-5).

rotating the chemical structure diagram so that a mirror plane in the chemical structure diagram is horizontal (CH: chapters 4-5).

rotating the chemical structure diagram so that a mirror plane in the chemical structure diagram is vertical (CH: chapters 4-5).

### **Response to Arguments**

12. Applicant's arguments filed 7/17/2003 have been fully considered but they are moot in view of the amendment and new grounds of rejection.

### **Conclusion**

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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**15. Any inquiry concerning this communication or earlier communications**

**from the examiner should be:**

**directed to:**

William Thomson telephone number (703) 305-0022, Monday-Thursday 0830 to 0700 ET, **or** the examiner's supervisor, Kevin Teska, telephone number (703) 305-9704. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

**mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

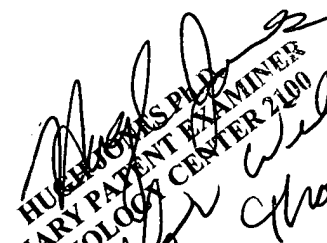
**or faxed to:**

(703) 308-9051 (for formal communications intended for entry)  
**or** (703) 308-1396 (for informal or draft communications, please label "*PROPOSED*"  
**or** "*DRAFT*").

William Thomson

Primary Patent Examiner

February 5, 2005

  
HUGGINS P.D.  
PRIMARY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
*William Thomson*